II. Amendments to the Drawings

Replacement sheets 1-4 of 4, which include formal drawings of Figures 1-12, are included. The formal drawings are being provided in response to the objections that most of the drawings and reference numerals appear informal and hand-drawn with some of the reference numerals being slightly illegible. Accordingly, Applicants believe that the formal drawings have cured the respective objections.

III. Remarks

Claims 1-13 were pending in this application. Claims 9-13 are allowed, and claims 1-8 have been rejected. The present amendment cancels claim 2, and amends claims 1, 3-4 and 8 to more particularly point out and clarify Applicants' invention. No new matter has been added. After this amendment, claims 1 and 3-13 will be pending.

Reconsideration of the application in view of the above amendments and following remarks is respectfully requested.

Rejections under 35 U.S.C. § 103

Claims 1-3 and 7-8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,059,312 issued to Staub, et al. ("Staub"), in view of U.S. Patent No. 7,264,269 issued to Gu, et al. ("Gu"). Claim 2 has been cancelled by the present amendment and therefore, the rejection of claim 2 is now moot. In view of the amendments and remarks contained herein, Applicants respectfully submit that the rejections of claims 1, 3 and 7-8 are traversed.

Claim 1 has been amended to recite that the airbag forms a main chamber arranged to be adjacent to a thorax area of a vehicle occupant. An auxiliary chamber positioned on top of the main chamber. The outflow opening is formed by the auxiliary chamber. The main chamber has a lower outer impact surface for being directly impacted by the thorax area of the vehicle occupant, and the auxiliary chamber has an upper outer surface for being directly impacted by the thorax area of the larger occupant to engage the closing element and for not being directly

impacted by the thorax area of the smaller occupant to not engage the closing element. Support for these amendments may be found in Applicants' application at paragraphs [0012]-[0014], [0028]-[0029], [0032-[0034] and [0036]-[0037], and Figures 1-7.

Staub discloses a front airbag for the reliable protection of a vehicle occupant with a reduced risk of injury to the occupant when the occupant's head is "out of position". *Staub* at Abstract. The airbag comprises an upper fabric ply 2, a lower fabric ply 4, and a middle fabric ply 6. The middle ply 6 divides the airbag, enclosed by the upper fabric ply 2 and the lower fabric ply 4, into two chambers 18, 20. The first chamber 18 (e.g. Examiner suggests most analogous to the Applicants' claimed auxiliary chamber at Office Action page 3) is formed between the middle ply 6 and the upper fabric ply 2 and faces the vehicle interior or a vehicle occupant. The second chamber 20 (e.g. Examiner suggests most analogous to the Applicants' claimed main chamber at Office Action page 3) is formed between the middle ply 6 and the lower fabric ply 4, and is connected to the first chamber 18 via an overflow port 16 (Examiner suggests the overflow port 16 is most analogous to Applicants' claimed outflow opening at Office Action page 3).

When the airbag is being inflated, the inflator 12 provides gas that flows into the second chamber 20 of the airbag along a path mainly transversely to the direction toward the vehicle occupant (i.e. transversely to the direction of principal deployment of the airbag). This causes the airbag to be inflated as quickly as possible radially, in order to cover a large area before it moves toward the vehicle occupant in the direction of principal deployment. Increased safety is thereby achieved if the vehicle occupant is not centered in front of the airbag. The gas then flows out of the second chamber 20

through the overflow port 16 into the first chamber 18 of the airbag to fill this chamber. In this case as shown in Figure 1, the vehicle occupant is positioned far enough away from the airbag module that the airbag can deploy completely ("properly positioned" scenario) *Id.* at Col. 3, line 44 through Col. 4, line 19.

In a modified embodiment, a diffuser formed of a fabric portion 28 (Examiner suggests portion 28 is most analogous to Applicants' claimed closing element 28 at Office Action page 3) is arranged in the first chamber 18 over the overflow port 16. In the properly positioned scenario, the portion 28 further promotes radial inflation of the airbag by causing the gas flowing out of the second chamber through the overflow port 16 to be deflected to flow essentially laterally into the first chamber 18. *Id.* at Col. 5, lines 41-59.

Notably in the above scenario, the occupant is properly positioned relative to the airbag by being spaced apart from the airbag in the principle direction of deployment (e.g. occupant is rearwardly spaced apart from the front airbag) to allow the airbag to fully deploy before the occupant directly contacts the upper fabric ply 2 of the first chamber 18. The size or stature of the occupant only relate to how the occupant is centered in front of the airbag. So regardless of the size or stature of a properly positioned occupant, the occupant (e.g. more specifically, the occupant's head) still directly impacts the upper fabric ply 2 and thus, will not cause the airbag to respond differently, or more specifically cause the portion 28 to be engaged or not engaged. Moreover, the lower and middle fabric plies 4 and 6, which define the second chamber 20, are not directly impacted by the occupant regardless of the occupant's stature.

Figure 2 shows a section through the airbag in which the head 24 of the vehicle occupant is too near the airbag module or the airbag ("out of position" scenario). Here

too, when the inflator 12 is activated gas flows radially, essentially transversely to the direction of principal deployment, into the second chamber 20 between the middle fabric ply 6 and the lower fabric ply 4. In this scenario, the airbag inflates until the middle ply 6 presses the upper fabric ply 2 against the head of a vehicle occupant. At this point, further movement of the upper fabric ply 2 is restrained or prevented by the head of the vehicle occupant. Since the middle ply 6 is simultaneously pressed against the upper fabric ply 2 by the expanding gas, the overflow port 16 in the middle ply 6 is likewise pressed against the upper fabric ply 2 and is sealed off by the latter. This prevents the possibility that further gas will flow into the first chamber 18 of the airbag. *Id*. at Col. 4, lines 50-67.

In the modified embodiment illustrated in Figure 4, the middle ply 6 still presses the upper fabric ply 2 against the head of the occupant, which retrains movement of the upper ply 2. The restrained upper ply 2 causes the portion 28 to press against the middle ply 6 to close the overflow port 16.

Notably in the out of position scenario, the airbag responds differently than in the properly positioned scenario only because the occupant is so close to the airbag in the principle deployment direction that the airbag can only partially inflate before contacting the occupant's head. However as in the properly positioned scenario, the size or stature of the occupant only relate to how the occupant's head is centered in front of the airbag, and since the airbag is disclosed as inflating radially to cover a large area and therefore, the head of a large or small occupant will still directly impact the upper fabric ply 2 of the first chamber 18, thereby causing the ply 2 to press against the middle ply 6 and fabric portion 28 simultaneously to seal off the overflow port 16. The size or stature of the occupant will not cause the airbag to respond differently, or more specifically

cause the portion 28 to be engaged or not engaged, when an out of position occupant contacts the airbag. Moreover, the lower and middle fabric plies 4 and 6, which define the main chamber 20, are not directly impacted by the occupant regardless of the occupant's stature. Accordingly, Staub fails to disclose an airbag having a main chamber that has a lower outer impact surface for being directly impacted by the thorax area of the vehicle occupant, and the auxiliary chamber that has an upper outer surface for being directly impacted by the thorax area of the larger occupant to engage the closing element and for not being directly impacted by the thorax area of the smaller occupant to not engage the closing element.

As noted by the Examiner, Staub also fails to disclose that the airbag is a side airbag and relies on Gu for such disclosure. However, Gu fails to disclose the elements noted as missing in Staub as discussed in the foregoing paragraphs. Rather, Gu discloses an airbag with cushion cells 29, which upon receiving the head of the occupant, exhibit an internal pressure higher than a predetermined value, causing gas to flow into a secondary chamber 58 through an air-permeable panel 10 (see *Gu* at Abstract). In particular, the airbag only has a single exterior surface or panel 12 that is directly impacted by the occupant regardless of the occupant's stature and which upon impact causes the gas in the cushion cells 29 to become pressurized causing gas to flow through the air-permeable panel 10 to vent to the second chamber 58, and not to be restricted as in the present invention. Moreover and as illustrated in Figures 2a and 4b, the exterior surface panel 12 is only associated with one of the chambers 58 or 29 and not the other of the chambers 58 or 29. Accordingly, only one of the chambers 58 or 29 has a surface that is directly impacted by the occupant, notably regardless of the

occupant's stature, while the other of the chambers 58 or 29 does not have a surface that is directly impacted by the occupant.

Neither Staub nor Gu independently or in combination, disclose, teach or suggest the present invention recited in claim 1. More specifically, neither Staub nor Gu independently or in combination, disclose, teach or suggest an airbag forming a main chamber arranged to be adjacent to a thorax area of a vehicle occupant, and an auxiliary chamber positioned on top of the main chamber, wherein an outflow opening is formed by the auxiliary chamber, the main chamber has a lower outer impact surface for being directly impacted by the thorax area of the vehicle occupant, and the auxiliary chamber has an upper outer surface for being directly impacted by the thorax area of the larger occupant to engage the closing element and for not being directly impacted by the thorax area of the smaller occupant to not engage the closing element. In particular, the upper fabric ply 2 of the first chamber 18 of Staub is directly impacted regardless of the occupant's stature, and the second chamber 20 does not have an outer impact surface that is directly impacted by the occupant. Moreover, Gu only has a single panel/impact surface 12 associated with only one of the chambers 58 or 29 that is directly impacted by the occupant and further, when impacted the gas in the cushion cell 29 is vented instead of restricted as in the present invention. In that both Staub and Gu lack the noted elements of claim 1, the rejections based thereon should be withdrawn. Accordingly, Applicants believe that claim 1 and its dependent claims 3 and 7-8 are in a condition for allowance.

Claims 4-6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Staub and Gu, and further in view of US. Publication No. 2004/0124615 issued

to Tanase, et al. ("Tanase"). In view of the amendments and remarks contained herein, Applicants respectfully submit that the rejections of claims 4-6 are traversed.

Since claims 4-6 depend from claim 1 and since Tanase fails to disclose an airbag forming a main chamber arranged adjacent to a thorax area of a vehicle occupant, and an auxiliary chamber positioned on top of the main chamber, wherein an outflow opening is formed by the auxiliary chamber, the main chamber has a lower outer impact surface for being directly impacted by the thorax area of the vehicle occupant, and the auxiliary chamber has an upper outer surface for being directly impacted by the thorax area of the larger occupant to engage the closing element and for not being directly impacted by the thorax area of the smaller occupant to not engage the closing element, the combination of Staub, Gu and Tanase cannot render the claims of the present invention as obvious. The rejections under § 103(a) are therefore improper and should be withdrawn. Accordingly, Applicants believe that claims 4-6 are in a condition for allowance.

Allowable Subject Matter

Applicants gratefully acknowledge that the Examiner has indicated that claims 9-13 are allowed.

Conclusion

In view of the above amendments and remarks, it is respectfully submitted that the present form of the claims are patentably distinguishable over the art of record and that this application is now in condition for allowance. Such action is requested.

Respectfully submitted,

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